



US Army Corps  
of Engineers  
Huntsville Center

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# Tri-Service Automated Cost Engineering System

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## Purpose

The Tri-Service Automated Cost Engineering System (TRACES) consists of a suite of software applications designed to support the cost engineers throughout the Corps of Engineers, as well as the cost engineers with the Air Force and Navy. TRACES applications are used in support of military construction projects worldwide, environmental remediation (HTRW) projects, Support for Others program and Civil Works project in the United States and Central and South America.

TRACES provides a standard suite of automated tools used for the preparation of planning and budgetary estimates, for analysis on budget cost data during design, bid opening and modification estimates, and captures contract costs for historical purposes.

TRACES has been in existence since 1982 and has proved to be a valuable tool to the Tri-Service cost engineering community. It has

drastically reduced the time required to prepare and/or review construction cost estimates by enabling the cost engineer to develop standard formats, processes and procedures.

The standard formats have led to the sharing of information between districts and allowed district offices to collaborate while preparing construction cost estimates. The standard formats have also reduced the time required during the review of Architect/Engineer prepared construction cost estimates. In general, using TRACES has led to more accurate construction cost estimates.

## Mission

The mission of TRACES is to build a user-friendly, cost engineering platform in a true 32-bit Windows environment, with all systems and databases required to prepare, analyze, review and maintain all types of cost estimates and schedules.

## Modules

TRACES modules include the following:

- **Micro-Computer Aided Cost Estimating System (MCACES):** MCACES is a DOS-based software application used by the Corps of Engineers and AE firms for the preparation of detailed construction cost estimates.

The software is used for the preparation of programming estimates, current working estimates, bid opening estimates and construction modification estimates in support

***TRACES' seven modules support users such as Army, Navy and Air Force and their A-E contractors worldwide.***

## Modules

of the Military, Civil Works, and Hazardous, Toxic Waste Programs. There is also a 16-bit Windows-based version of MCACES, which supports the Military Program, called MCACES for Windows (MFW).

The latest version MCACES second generation ( $M_{II}$ ), a 32-bit version of MCACES, has been released and is quickly becoming the standard detailed cost estimating system for the Corps of Engineers. Within the next couple years MCACES Gold and MFW will be phased out.

- **Parametric Cost Estimating System (PACES):** PACES is a 32-bit Windows-based software application used for preparing parametric construction cost estimates and cost estimates where little or no real design has been developed to date. This software is licensed to the Department of Defense.

- **Unit Price Book (UPB):** Rather than being a software application, this is a database containing construction cost data for approximately 23,000 different cost applications. The UPB is used by MCACES for the development of line item costs associated with the project cost estimate.

- **Area Cost Factors (ACF):** ACF is a 32-bit Windows-based application used to analyze the associated cost for construction at a specific location (worldwide) as compared to a U.S. average construction cost.

- **Historical Analysis Generator (HII):** HII is a 32-bit Windows Web-based software application developed for collecting construction cost data and for evaluating building costs based upon common facility types.

- **Cost Risk Analysis (Cost Risk):** Cost Risk is a 32-bit Windows-based application with built-in interface with PACES (or can be used stand alone) providing the capability to evaluate risks associated with the project and how that affects the construction costs for the proposed project.

- **Life Cycle Cost (LCC):** LCC is a 32-bit Windows-based application used to analyze the costs associated with engineering decisions as related to the life cycle of the facility. Based on the items selected, a normal life expectancy is identified with associated costs for maintenance and repair, and replacement of the selected item during the life cycle of the facility.